



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,660	07/02/2001	Kan Frankie Fan	40694/JFO/B600	9837
7590	07/13/2005		EXAMINER CHANG, RICHARD	
Christie Parker & Hale, LLP P O Box 7068 Pasadena, CA 91109-7068			ART UNIT 2663	PAPER NUMBER

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/897,660

Applicant(s)

FAN, KAN FRANKIE

Examiner

Richard Chang

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 30, 36, 37, 39-55 and 68 is/are rejected.
- 7) ☒ Claim(s) 18-29, 31-35, 38, 56-67, 69 and 70 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's arguments and amendments with respect to claims 1-70 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim 38 had been canceled.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-17,30,36,37,39-55 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,831,893 ("Nun et al.") in view of US patent 6,628,617 ("Karol et al.").

Regarding Claim 1, Nun et al. teach a network monitoring and classifying (NMC 200) apparatus that monitors data packets transmitted on a data network and processes the data packets by classifying the data packets, associating the classified data packets with a particular data flow (balancing transmission unit traffic over network links) (See Fig. 2, Col. 3, lines 49– 56), comprising of

a. disposing packets (transmission units) into a particular stream of packets (flows) (See Fig. 1, Col. 2, lines 47– 53),

b. assigning (grouping) stream of packets (flows) by the classifier (260) into first particular flow (first flow lists), each of the first particular flow (first flow lists) associated to a first packet processor (PP1) corresponding to a source node and a destination node (a selected network link) (See Fig. 2, Col. 8, lines 38–42),

c. indicating (determining) a relative load information (traffic metric representative of a traffic load) from the first packet processor (PP1) on the first flow list (the selected network link) (See Fig. 2, Col. 9, lines 28–31),

d. responsive to relative load information (the traffic metric), assigning (regrouping) stream of packets (flows) by the classifier (260) into a second particular flow (second flow lists), associated to a second packet processor (PP2), corresponding to a source node and a destination node (a selected network link), the regrouping dynamically balancing the packet (transmission unit) traffic among the network links (See Fig. 2, Col. 9, lines 31–35), and

e. outputting (transmitting) the respective second particular flow (second flow lists) to the particular data processor (230 or 240) over the associated physical access (210 or 220) respective selected network link (See Fig. 2, Col. 9, lines 35–41).

Nun et al. teaches substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“separate flow, forwarding and translation databases to perform the above flow control functions”.

Karol et al. teaches a gateway processor (430) maintaining separate flow (432), forwarding (433) and translation (434) databases to perform the above flow control functions (See Fig. 4, Col. 6, lines 30-59).

A person of ordinary skill in the art would have been motivated to employ Karol et al. in Nun et al. in order to obtain a network monitoring and classifying apparatus and to take advantage of maintaining separate flow, forwarding and translation databases in a gateway processor to perform the above flow control functions in claim 1.

The suggestion/motivation to do so would have been to maintain separate flow, forwarding and translation databases in a gateway processor to perform the above flow control functions, as suggested by Karol et al. in Col. 6, lines 30-59. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Karol et al. with the Nun et al. to obtain the inventions specified in claim 1.

Regarding Claim 36, this claim has limitations that is similar to those of claim 1 and Nun et al. further teach a method of the NMC (200) comprising of

a. inputting and capturing data packets (transmission unit) from the physical access unit (210 as PHY device) from the transmission link (transmission unit source) (See Fig. 2, Col. 5, line 66 – Col. 6, line 5),

b. assigning (classifying) stream of packets (the transmission unit) corresponding to a source node and a destination node (according to a predetermined flow characteristic),

c. selecting a source and destination path (preselected network link) over which the stream of packets (transmission unit) is to be transmitted (See Fig. 2, Col. 8, lines 38–42), and

d. outputting (transmitting) transmitting the stream of packets (transmission unit) over the source and destination path (preselected network link) (See Fig. 2, Col. 9, lines 35–41), thus it is rejected with the same rationale applied against claim 1 above.

Regarding Claim 37, this claim has limitations that is similar to those of claim 36 and Nun et al. further teach that assigning (selecting) the source and destination path (preselected network link) according to the relative load information (predetermined flow characteristic) using a dynamically balancing (predetermined dynamic load balancing) technique (See Fig. 2, Col. 9, lines 28–35), thus it is rejected with the same rationale applied against claim 36 above.

Regarding claim 39, this claim has limitations that is similar to those of claims 1 and 30 and Nun et al. further teach that the NMC system (200) as a network component includes a header processor (250), and a classifying processor (260) and a plurality of packet processors (PP1 to PPN) for the program execution of all the functions, which inherently include computer readable program codes recorded on a computer readable medium for executing related functional program forming a computer program product (See Fig. 2, Col. 5, lines 51–60), thus it is rejected with the same rationale applied against claims 1 and 30 above

Regarding claims 17 and 55, these claims have limitations that is similar to those of claims 1 and 39 and Nun et al. further teach that for the NMC system (200), the

physical access unit (210) and the physical access unit (220) are independent and may connect but not limited to all different nodes to form independent link between nodes to be transmitted over heterogeneous speed network links (See Fig. 2, Col. 6, lines 12-24), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claim 30, is claim has limitations that is similar to those of claim 1 and Nun et al. further teach that for the NMC system (200) as discussed above further comprising:

a. the headers of the packets (transmission units) contains the information of the source node and the destination node of the network as part of the predetermined rules for assigning (disposing) the first particular flow (first flow lists) (See Fig. 2, Col. 7, lines 37-42),

b. the data packets in the first particular flow (first flow lists) are sorted based on the source IP address or destination IP address (See Fig. 3, Col. 6, lines 36-45),

(c. and d. follow the same rationale as discussed above), and

e. the data path unit (230) may perform Internet Protocol (IP) (using a predetermined link-layer transmission protocol) to communicate the packets (transmission unit) over the network links (flow lists) in cooperation with a IP (network-layer protocol) and transport control protocol (TCP) following the TCP/IP standard, inherently wherein each of the IP (network-layer protocol) and the TCP (transport-layer protocol) is one of a connectionless protocol and a connection-based protocol (See Fig. 3, Col. 6, lines 27-32), thus it is rejected with the same rationale applied against claim 1 above.

Regarding claims 31-32, these claims have limitations that is similar to those of claim 30 and Nun et al. further teach that the network includes implementation of local area network (LAN), inherently, the predetermined link-layer transmission protocol is one of an IEEE STD. 802 protocol (See Fig. 2, Col. 1, lines 19-20), thus it is rejected with the same rationale applied against claim 30 above.

Regarding claims 2 and 40, these claims have limitations that is similar to those of claims 1 and 39 and Nun et al. further teach that each of the transmission units is data packet (See Col. 8, lines 48-50), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 3 and 41, these claims have limitations that is similar to those of claims 1 and 39 and Nun et al. further teach that each of the packet (transmission units) includes one of source address (information), destination address (information), and a combination thereof, and the flow is classified according to one of the predetermined rules (disposing comprises characterizing) that a packet having a source address (information), destination address (information) and a combination thereof (See Col. 8, lines 15-18), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 4-6 and 42-44, these claims have limitations that is similar to those of claims 1 and 39 and Nun et al. further teach that for the local area network application, inherently, the predetermined link-layer transmission protocol is an IEEE STD. 802 protocol, a packet-based protocol (See Col. 1, lines 20-25), thus it is rejected with the same rationale applied against claims 1 and 39 above.



Regarding claims 7 and 45, Nun et al. further teach that each of the transmission units is data packet based on IP (network layer) over IEEE STD. 802 protocol LAN (link-layer transmission protocol) (See Col. 6, lines 30-32), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 8 and 46, these claims have limitations that is similar to those of claims 1 and 39 and Nun et al. further teach that each of the transmission units is data packet based on TCP (transport layer) /IP (network layer) over IEEE STD. 802 protocol LAN (link-layer transmission protocol) (See Col. 6, lines 28-30), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 9-16 and 47-54, these claims have limitations that is similar to those of claims 1 and 39 and Nun et al. further teach the network-layer protocol is a connectionless protocol, and the connectionless protocol is an internet protocol (IP) and the transport-layer protocol is a connection-based protocol, and the connection-based protocol is a transmission control protocol (TCP) (See Col. 12, line 65 - Col. 13, line 4), thus it is rejected with the same rationale applied against claims 1 and 39 above.

Regarding claims 68, these claims have limitations that is similar to those of claims 1 and 30 and Nun et al. further teach that the NMC (200 as a network load balancer in a communication network having network links) comprising of:

a. a header processor (250, flow synthesizer) that receives packets (transmission units) from a data path (230 transmission unit source), and classifies the data packets by determining which rule or rules of a predetermined set of rules correspond to each of

Art Unit: 2663

the headers HDR (synthesizes flows characteristic of selected transmission units) )  
(See Fig. 2, Col. 7, lines 9-12), and

b. a classifier (260 link classifier), coupled with the header processor (250, flow synthesizer) and the network links, that classifies the network links according to one of the predetermined rules (relative to a predetermined flow metric), and determines (assigns) selected flows to selected network links predetermined rules (responsive to a predetermined flow metric), the selected packets (transmission units) corresponding to the selected flows being communicated with the communication network through a specific flow (the respective selected network links) (See Fig. 2, Col. 7, lines 37-39), thus it is rejected with the same rationale applied against claims 1 and 39 above.

#### ***Allowable Subject Matter***

4. Claims 18-29, 31-35, 38, 56-67 and 69-70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if no art rejection can be applied.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

Art Unit: 2663

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*RLC*  
rkc

Richard Chang  
Patent Examiner  
Art Unit 2663

*Ricky Ngo*  
RICKY NGO  
PRIMARY EXAMINER

7/11/05